REMARKS

Claim Rejections Under 35 USC § 103

The Office Action rejects claims 1-3, 5, 6, 9-14 and 16-17 over Delp et al. in view of Koops et al. (WO 03/080334-Koops 1 hereinafter):

The Office Action alleges that the Delp process comprised welding a mixture of colorant and absorber to the surface of a plastic under the action of laser light and that the mixture of colorant and absorber could be in the form of a multilayered polymer component, with a hint to Par.23.

Contrary to that, the Delp process discloses that the "colorant is introduced, in combination with the laser light-absorbent substance, into the portions of plastic or coating surface which have been melted by laser irradiation" (Par.0008).

This means, that in Delp, the inscription medium is composed of a colorant and a laser-light-absorbing substance. This inscription medium is coated onto a plastic surface which has to be inscribed by laser light. Then, under the action of laser light, the plastic surface to be inscribed is melted at that certain portion and the mixture of colorant and laser absorber adheres to the molten portion by hardening the molten plastic portion. After the inscription is accomplished, the rest of the inscription medium is wiped off the substrate surface (see, for example, claim 18).

This is a simple adhesive process, no welding process of a plastic material (substrate) with a polymer component (inscription medium) as in the presently claimed invention

Furthermore, in paragraph 23 of Delp, it is mentioned that laser-light absorbing substance may comprise multilayered pigments based on phyllosilicates (mica). This is for sure not a polymer component and has nothing to do with the present inscription medium. A multilayer pigment is by no means a multilayer polymer component, nor is it a polymer of any type. See, for example, paragraphs 24-27 describing the layers as various metal oxide layers.

Thus, the allegations and assertions regarding Delp are incorrect.

Koops 1 is alleged to disclose two layers laying on top of each other (1 and 3 in fig.1), where they are separated by a support film 2 (fig.1), and that the first layer comprises a plastic and an energy absorber.

The Office Action refers to page 2, lines 42-46 and page 7, lines 6-8 of the English translation). However, no corresponding disclosure is found at all in said translation despite a thorough review thereof.

However, Koops 1 corresponds to US 2006/0051604 A1, i.e., this is its US National Phase application, and thus, the disclosure is that of the same PCT application. This version is much easier to understand than the machine translation provided by the Office Action.

The structure of the film in Fig.1 of Koop1 is described at page 6, paragraphs [0119] to [0122]. Layer 1 is a backing (support) layer, which is further described at page 2, paragraphs [0032] and [0033]. There, it is explicitly described to be transparent or translucent and designed to prevent laser absorption. This is quite logical, when one has understood how the process works.

Thus, the first (backing) layer of Koops 1 does surely not comprise an energy absorber as the Office Action asserted!

The Office Action also alleges that layer 3 is the second layer which serves as inscription medium. Looking into paragraph [0119] it becomes clear that layer 3 is a layer which comprises a glas flux pigment and an energy absorber – thus, it is the energy absorber layer instead of the inscription medium. The inscription medium is layer 4, which comprises a laser sensitive pigment besides glass flow pigment and absorber.

Thus, unlike in the present claims, the absorber containing layer and inscription medium are not in separate layers, since both pigment containing layers (3 and 4 in Fig. 1) comprise an absorber, but merely 4 comprises the laser sensitive pigment (colorant). Furthermore, since both layers lay on top of each other without any layer between them, there is no separating support film. Next, the "support film 2", indicated by the examiner, is in reality an adhesive film, which may be taken from paragraph [0119] as well.

The process of Koops 1 is described to some detail in paragraphs [0124] to [0126]. In (13) of Fig. 1, the transferred material is explained. It is metal oxide (laser sensitive colorant) sheathed by glass particles (from the molten glass flux pigments). No polymer component is transferred or welded to the substrate (see claim 1 reciting that the polymer component dissolves together with the colorants and is then durably welded to the plastic surface). In fact, paragraph [0126] of Koops 1 explicitly teaches that the desired inscription 12 remains on the component and is in essence composed of individual points which in turn are composed of metal oxide deposits coated by a glass layer.

In sum, the process described in Koops 1 is totally different regarding layer sequence of the transfer material and process particulars, leading to different markings on the substrate.

Since Koops 1 requires glass flux pigments and energy absorber in one layer (3), and the same two plus laser sensitive pigments in an adjacent layer (4), no separation between

energy absorber and laser sensitive pigment (colorant) takes place (see new claim 20 and top of page 3 for support). The same is the case in Delp, where energy absorber and laser sensitive pigment (colorant) are mixed in one single layer.

All dependent claims are patentable for at least the same reasons as discussed above. Nevertheless, the additional comments regarding the allegations of the further cited art are provided.

Regarding claim 4 Raupach discloses that the inner layer, which is inscribed through the action of a laser, contains 0.05 to 10 % by weight of a laser sensitive pigment. Please note, that this inner layer is the layer which has to be inscribed by laser action, i.e. the inscription receiving layer (in our case the plastic surface, not the support layer!). It is disclosed in the present application (page 3, first paragraph of the application text) that the plastic (surface) itself must not contain itself any substance which absorb laser light, which is quite the contrary to Raupach.

Combining Raupach with Delp and/or Koops 1 does not make sense, since Delp and Koops 1 do not describe whether the receiving surface comprises energy absorbers or not (reasonably it does not contain any).

Regarding Claim 8 Furukawa discloses that resin material (which is scattered onto a solid paint and then overprinted) has a particle size of 10 nm to 100 µm. The process disclosed in Furukawa is not even a laser inscription process, but a color image transfer method where the color image is transferred by heat pressure! See claim 1, for example. Therefore, no skilled person would have combined anything from Furukawa with Delp and/or Koops 1, since they describe totally different processes. Even if combined, the resin material of Furukawa has nothing to do with the polymer component of the presently claimed invention.

Regarding claim 15 Braun discloses a process where a transparent and optically variable layer is located on top of a laser markable layer, and wherein the laser markable layer is marked by laser action without any distortion of the optically variable layer, although the laser marking process is performed through the OV layer (claim 1). In paragraph [0016] it is described that the OV layer may be covered by a transparent protective layer and that both layers may be connected through heat lamination. Applicants do not understand how this should be connected to the present case. These solutions have nothing in common. That polymeric or plastic layers may be connected by heat lamination thereof is known per se, but

not crucial for present claim 15, which is directed to the particular technical solution of the presently claimed invention.

The Office Action rejects claims 18-19 over Delp et al. in view of Koops et al. (WO 03/080335-Koops 2 hereinafter).

As in the case of Koops 1 above, the Office Action provides a machine translation of this reference. However, Koops 2 corresponds to US 2005/0221027, and the disclosure thereof is much easier to understand than the machine translation.

Koops 2 discloses almost the same process and transfer medium as Koops 1 (the comments regarding which are incorporated herein by reference), with the difference, that in Koops 2 the pigment containing layers, which lay on top of each other, may contain 3 different layers containing different contents of laser sensitive pigments each (see, for example, claim 1).

The layers not containing the laser sensitive pigments are support layers (called backing layer, see Koops 1) or adhesive layers, which are not laser absorbing, but laser transparent (claim 12). They do not lay between energy absorbing layer and colorant containing layer (no separating support layer as in the present invention), since all pigment containing layers contain the ones and the others as well and are, in addition, adjacent layers. The resulting marking is composed of metal oxides (colorants) covered by a glassy layer (from the glass flux pigments) as it is in Koops 1.

Therefore, claims 18 and 19 are in no way induced by combining Koops 2 with Delp or any other of the references cited before.

In sum, one of ordinary skill in the art would not have combined any of the references cited in order to solve the problem of the presently claimed invention. And, even if combined, the solution would have been anything but not the technical solution according to the presently claimed invention.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,

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